REGEIVED CENTRAL FAX CENTER JUL 2:7 2006

IN THE CLAIMS:

1. (Currently Amended) A turnover apparatus for turning over articles conveyed sideways on one or more recirculating conveyor loops by frictional engagement therewith, comprising:

a series of spaced apart lugs attached along <u>each of said conveyor loops</u> and projecting above an upper surface thereof of said conveyor loops to be able to be engaged by articles being advanced on said <u>upper surface of said conveyor loops</u>;

one or more speed-up belts located adjacent to a turnover station located along said conveyor loops, said speed-up belts positioned and driven so as to frictionally engage said articles on said conveyor loops and advance said articles into contact with a next ahead lug attached to said conveyor loops;

a series of flipper arms pivotally mounted to at least one of said each one or more conveyor loops to be carried along with said recirculating conveyor loops, said flipper arms pivotably mounted at a pivot point adjacent a respective associated lug so that said pivot point has a fixed relative position with respect to said associated lug, said flipper arms each having a one portion able to engage and lift a portion of an article after being driven against an associated lug by said speed up belts when said flipper arm portion is pivoted up from a normally retracted position below said conveyor loop surface;

a stationary cam ramp adjacent to each conveyor loop having a series of flipper arms mounted thereto and located at said turnover station to be positioned to engage another portion of each flipper arm as said conveyor loops carry each flipper arm past said stationary cam ramp to cause said one portion of each of said flipper arms to be successively pivoted up-to engage said one portion into engagement with an adjacent article located above said one portion

to raise said article to on an edge position, each (lipper arm pivoting back down to said normally retracted position after being carried past an associated cam ramp.

- 2. (Previously Amended) The apparatus according to claim 1 wherein said lugs cach have a trailing upper edge located to the rear of a said bottom part of said lug, operation of said speed-up belts driving said on edge article forward to engage said trailing edge of said lug, a lower part of said article driven past said trailing edge, tipping over said article backwards to complete said turnover.
- 3. (Original) The apparatus according to claim 2 wherein said lugs each have a rear facing curved shape creating said trailing edge to guide raising of said leading edge of said article.
- 4. (Previously Amended) The apparatus according to claim 1 wherein two spaced apart conveyor loops are included to be able to support and sideways advance said elongated articles, a series of said lugs and flipper arms mounted to each conveyor loop, each lug and flipper on one conveyor aligned with a corresponding lug and flipper arm on the other conveyor loop.
- (Previously Amended) The apparatus according to claim 4 wherein two
 spaced apart side by side speed-up belts are disposed between said two chain conveyor loops.

- 6. (Original) The apparatus according to claim 1 wherein each of said flipper arms has a first and a second segment, each segment extending at an angle to the other segment, a free end of said first segment downwardly extending and pivotally mounted on a conveyor loop by a chain link pin extending from said conveyor loop.
- 7. (Original) The apparatus according to claim 6 wherein each flipper arm second segment extends upwardly to form a knee at the intersection of said first and second segments, said knee engaging said cam to cause pivoting of each flipper arm when moving past said cam ramp.
- 8. (Original) The apparatus according to claim 7 further including an arcuate guide slot formed in said second segment of each flipper arm and a guide pin extending from an associated chain link of an associated chain link conveyor loop into said guide slot.
- 9. (Original) The apparatus according to claim 1 wherein said cam ramp is adjustably mounted to selectively enable varying of the angle of a cam surface engaging said another portion of each flipper arm.
- 10. (Previously Amended) The apparatus according to claim 1 further including a series of let down elements pivotally mounted on each conveyor loop, each element located adjacent a respective flipper arm, and a second cam ramp engaging each of said let down elements when advancing through said turnover station to initially raise said let down element

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and thereafter lower the same, each let down element having a portion engaging a rear side of an article raised to an on edge position.

11. (Currently Amended) A method of turning over articles at a turnover station alongside a conveyor including one or more recirculating conveyor loops supporting and frictionally engaging said articles positioned on said conveyor loops to convey the same, including:

mounting a series of spaced apart lugs to each conveyor loop, said lugs each having a portion projecting above said conveyor loops;

loading each article into aligned spaces between successive lugs to be carried along on said conveyor loops;

pivotally mounting a series of flipper arm arms to at least one of said one or more conveyor loops to be carried along with said conveyor loop to which said flipper arms are pivotably mounted, said flipper arms pivotably mounted at a point adjacent each a respective associated lug so that said point has a fixed position with respect to said associated lug, each flipper arm having a an article engagement portion normally positioned just below a rear side of each lug;

driving each article so as to be advanced on said one or more conveyor loops into abutment with a next ahead lug;

fixedly locating a cam ramp adjacent each conveyor loop having said flipper arms pivotally mounted thereto at a turnover station so as to engage a one portion of each flipper arm moving into said turnover station as said-articles are an article is moved through said turnover station and past said cam ramps ramp, said each adjacent conveyor loop cam ramps ramp

configured to cause an upward movement of each of said flipper arms from a normally retracted position to engage a article engagement portion thereof of each of said flipper arms with a leading side of an article abutting a lug to elevate said leading side of said article when engaged therewith, said flipper arms each moving back to said retracted position after moving past said cam ramp.

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12. (Previously Amended) The method according to claim 11 further including the steps of providing a trailing upper edge on each lug spaced above an article in abutment against said lug;

raising said article to an on edge position with said flipper arm upward movement; and

thereafter advancing said on edge article against said lug trailing edge by a frictional engagement of a speed-up drive belt with a lower edge of said article to thereafter tip over said article in a rearward direction to complete the turnover at said turnover station.

- (Previously Amended) The method according to claim 12 wherein said 13. articles are conveyed by two or more spaced conveyor loops and an aligned series of lugs are mounted on each conveyor loop, and a pair of speed-up belts are interposed between said conveyor loops to drive a conveyed article into abutment with an adjacent lug.
- 14. (Previously Amended) The method according to claim 12 further including the step of engaging an upper rear portion of each article as it is tipping over from said on edge

position, and controllably restraining lowering of said upper rear portion of each article to slow the rate of tipping over of each article.

- 15. (Previously Amended) The method according to claim 14 further including pivotally mounting a let down element to each of said one or more conveyor loops, locating each let down element adjacent a respective flipper arm and engaging said upper rear portion of an article while driving each let down element with a second carn ramp to control descent thereof as said article tips over.
- 16. (Currently Amended) Apparatus for flipping over articles on a chain loop conveyor having an upper surface frictionally engaging said articles resisting thereon to convey said articles by advance of said chain loop conveyor, comprising a series of spaced apart lugs mounted to said chain loop conveyor defining intervening spaces able to receive an article to be turned over;

a series of flipper elements pivotally mounted to said chain loop conveyor to be carried along therewith as said loop conveyor is advanced, each flipper element located adjacent an associated lug and pivotable at a fixed relative position with respect to said associated lug to raise a first portion of each flipper element from a lowered retracted position into engagement with a leading side of an article abulting an associated lug;

a cam surface mounted at a turnover station to engage each flipper element moved past said turnover station by said chain loop conveyor, said cam surface causing pivoting raising motion of each flipper element from a retracted lowered position, said pivoting raising motion of each flipper element flipping up an article located adjacent a respective lug on said loop

conveyor chain, and each flipper element again assuming said lowered retracted position upon moving past said cam surface.

- 17. (Original) An apparatus according to claim 16 further including a speed-up drive engaging each article to advance the same against the next ahead lug prior to entering said turnover station.
- 18. (Original) An apparatus according to claim 17 wherein each lug has a trailing overhung edge to engage an upper portion of said article flipped up by said flipper element, and said speed-up drive further driving the bottom of said article while having an upper portion in engagement with said overhung edge to cause tipping over of said article.
- 19. (Previously Amended) An apparatus according to claim 18 further including a let down element pivotally mounted on one said of said chain loop conveyor chain and adjacent each flipper element, a second cam having an entrance segment engaging and pivoting up said let down element in said turnover station to engage on upper portion of said article tipped over by said engagement with said trailing edge, said second cam surface having an exit segment engaging said let down element to allow a controlled descent of said article as said article tips over to insure a slowed rate of drop to avoid damage thereto.